STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   Timber Sale Name: EAST CROCKER *Agreement #: 30-076284*

2. Name of applicant: Washington State Department of Natural Resources

3. Address and phone number of applicant and contact person:
   Mark Benner
   Olympic Region
   411 Tillicum Lane
   Forks, WA 98331
   360-374-6131

4. Date checklist prepared: 07/30/2004

5. Agency requesting checklist: Washington State Department of Natural Resources

6. Proposed timing or schedule (including phasing, if applicable):

   a. Auction Date:03/2/2005
   b. Planned contract end date (but may be extended): 3/31/2006
   c. Phasing:N/A

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Timber Sale

   a. Site preparation: *Piling and burning of landing debris.*

   b. Regeneration Method: *Both units will be hand planted. A total of 81.1 acres in Unit 1 and 48 acres in Unit 2 will be planted.*

   c. Vegetation Management: *Treatment needs will be assessed over time. It is anticipated that treatment of competing brush will be needed.*

   d. Thinning: *Treatment needs will be assessed over time.*

   Roads: Road maintenance, including grading, ditch cleanout, and repair or replacement of culverts, will occur as needed on existing roads. The PT-O-4000 road has been impacted in the past by firewood and cedar theft and garbage dumping. It will be gated after firewood salvage of the landings to avoid future impacts and loss of leave trees.

Rock Pits and/or Sale: *Rock used for future proposals may be obtained from the existing pit located on adjacent private land that is designated for this sale.*

Other: Future forest management activities are anticipated to continue within the WAU and adjacent to the current proposal. Potential activities may include but are not limited to firewood salvage, hardwood slashing, maple stump treatment, pre-commercial thinning, thinning and regeneration harvest. These future activities are connected with this proposal insofar as that they will occur in close proximity to the sale area, and that the roads used or constructed under this proposal may be used to perform the work. All activities will be compatible with the State's Habitat Conservation Plan (HCP) and applicable policy and planning documents. At this time specific proposals have not been formulated.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☐*303 (d) – listed water body in WAU:* ☐*temp* ☐*sediment* ☐*completed TMDL (total maximum daily load):*
☐*Landscape plan:*
☐*Watershed analysis:*
☐*Interdisciplinary team (ID Team) report:*
☒*Road design plan: East Crocker Road Plan, dated September 8, 2004*
☒*Wildlife report: Eagle Management Plan, dated XXX*
☒*Geotechnical report: Geologic Report, dated June 21, 2004.*
☐*Other specialist report(s):*
☐*Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):*
☒*Rock pit plan: Tarboo Powerline Pit Plan attached to the road plan.*
☒*Other: Forest Resource Plan, dated July 1992; State Soil Survey; Habitat Conservation Plan (HCP), dated September 1997; Special Concerns and TRAX Reports. All documents mentioned above are available for viewing at the Olympic Region Office during the SEPA comment period.*

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No other applications are pending.

10. List any government approvals or permits that will be needed for your proposal, if known.

☒*HPA* ☒*Burning permit* ☐*Shoreline permit* ☒*Incidental take permit* ☒*FPA* ☒*Other: Board of Natural Resources.*

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. *Complete proposal description: This proposed timber sale is located approximately 11 miles by road north of Quilcene in parts of Sections 1 and 12 in Township 28 North, Range 2 West, W.M. It is accessed off State Route 104. The sale is composed of two units. Unit 1 is composed of 81.1 acres of timber with Douglas fir and red alder being the dominant species. Unit 2 is composed of 48 acres of timber with Douglas fir and red alder being the dominant species. An additional 39.5 acres were evaluated for harvest as part of this proposal and will be left for wetland, stream and unstable slope protection and for leave tree clumps.*

A mix of State and commercial forest and small private properties (most are between 5 and 7 acres in size) surrounds the sale area. The west boundary of Unit 2 is adjacent to these small private parcels. All of Unit 1 and the rest of Unit 2 is surrounded by forest land. Most of the small private parcels to the west of Unit 2 have not been developed. However, private lands in this vicinity have exhibited an increase in development in recent years. There is a underground waterline owned by the City of Port Townsend located in the northern portion of Unit 1.

The sale design has been shaped by an effort to protect natural resources, including structurally unique trees, potentially unstable slopes, streams, wetlands, and wildlife. The initial project planning effort identified 168.8 acres of land to examine for potential timber harvest. Sale reconnaissance identified 39.5 acres of the original proposal area to be managed for environmental protection rather than timber harvest. This represents a 23% reduction from the initial gross acreage. The following exclusions were made for this purpose: 7.6 acres of leave tree clumps and 31.9 acres of wetland, riparian and unstable slope protection. There are also approximately 5.7 acres of existing roads and road rights-of-way within the sale area. In addition, Unit 1 contains 0.46 acres of cleared waterline right-of-way.

The timber harvest portion of this proposal involves the sale of timber, and the necessary road construction, reconstruction, and rock pit development to support this activity.

Sale of Timber:

Estimated volume:	*3,354 MBF*
Proposal area in acres:	*168.6*
Sale area in acres:	*129.1*
Largest unit:	*81.1 acres*
Type of harvest:	*Group retention regeneration harvest*
Logging system:	*Ground based and cable methods*
Landings: Number	*8*
Total area in acres	*1.8 acres (based on a 100'X100' impacted area)*

Roads:

To be constructed (feet)	*3,611*
To be improved (feet)	*2,628 (reconstruction, does not include pre-haul maintenance)*

b. *Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.*

This proposal falls within the western hemlock vegetation zone (TSHE).

Unit 1 is composed of Douglas fir and red alder with scattered western red cedar, western hemlock and bigleaf maple. Stand ages are 97 years old for 39% of the stand and 69 years old for the 61% of the stand that is hardwood dominated. There were no residual old-growth trees found in the unit. The unit appears to have been logged then burned at the time of last harvest. There is evidence of fire on the remains of old stumps and logs but none on any standing timber. The diameter breast height (dbh) of the Douglas fir averages 19.9 inches; red alder averages 12.7 inches; red cedar averages 18.2 inches and western

hemlock averages 14.9 inches. The Douglas fir is primarily located on the east and southeast edges of the unit and in the area of the road. The remainder of the unit is predominantly alder with occasional large Douglas fir and small red cedar present. Ground cover includes salal on the higher parts of the unit to the east, swordfern in the middle of the unit and salmonberry on the lower portions to the west. There are several small patches of phellinus root rot in the central and west portions of the unit.

Unit 2 is composed of Douglas fir and red alder with scattered western red cedar, western hemlock, grand fir, and bigleaf maple. Stand ages are 71 years old for 93% of the stand and 81 years old for 7% of the stand. There were no residual old-growth trees found in the unit. The unit appears to have been logged then burned at the time of last harvest. There is evidence of fire on the remains of old stumps and logs and a few western red cedars have burn scars. The diameter breast height (dbh) of the Douglas fir averages 20.3 inches; red alder averages 14.1 inches, red cedar averages 15.1 inches and western hemlock averages 13.1 inches. The Douglas fir is primarily located on the east and west portions of the unit. The remainder of the unit is predominantly alder with occasional large Douglas fir and small red cedar present. Ground cover includes salal on the higher parts of the unit to the east, salmonberry in the middle of the unit and swordfern on the lower portions to the west. There are several patches of phellinus root rot in the northwest portion of the unit. One small patch of red cedar poles was found in the southwest corner of the unit.

The sale has been designated as a combination dispersed and group retention regeneration harvest. Cable and ground yarding methods will be used except that rubber tired skidders will be excluded.

Areas identified for the purpose of resource protection include leave tree areas, Riparian Management Zones (RMZ's), wetland and unstable slope protection. Leave trees within the sale units have been selected based on wind firmness, size, and their unique structural characteristics. Most of the dispersed leave trees were selected from the dominant and codominant size classes. Larger trees often provide the height to diameter ratio and rooting structure needed to prevent blowing over after the surrounding canopy is removed. Leave tree clumps were selected to protect forested wetlands, streams and snags, and as such are representative of the stand in size and species. There is a glaring absence of old growth residual trees throughout both units. This type of material was searched out during the leave tree marking phase, however none were found. There are several older age class dominants that are transitioning into trees with old growth characteristics. These "transition" trees are estimated to range in age from 120 to 150 years. These trees exhibit large crowns; large diameter limbs, and are included in the largest diameter classes within the unit. An effort was made to identify and leave all of the oldest and largest "transitional" trees in both units. Most are 120 to 150 years old. Leave tree diameters range from 12 to 57 inches with the majority over 30 inches. Douglas fir comprises the majority of this material. In addition, a small number of red cedar with burn scars were found in Unit 2 and marked as leave trees.

Activity objectives for this proposal are multifaceted. The timber sale will provide revenue to the trust beneficiaries while protecting ecological values and the City of Port Townsend waterline. This includes: maintaining trees of unique structural characteristics such as older "transitional" Douglas fir; protecting soil productivity and slope stability; protecting Type 3, 4 and 5 streams; protecting forested wetlands; managing wildlife habitat for Bald Eagles; and evaluating the use of a road system that will most efficiently serve management needs while minimizing long term road impacts. Existing roads in need of maintenance or reconstruction will be improved. Objectives also include reforesting the area to a well-stocked condition, and maintaining options for future land use activities.

c. *Road activity summary. See also forest practice application (FPA) for maps and more details.*

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		3,611	*1.2	0
Reconstruction		2,628		0
Abandonment		0	0	0
Bridge Install/Replace	0			N/A
Culvert Install/Replace (fish)	0			N/A
Culvert Install/Replace (no fish)	18			

*based on a 15 foot subgrade width.

Roads and Access

This proposal will involve 3,611 ft of new logging road construction and 2,628 ft of reconstruction. Reconstruction work will vary by road, but will include the following activities: ditch construction (will require grubbing), realignment of vertical curves and centerline (will require re-excavation of back slope and some end haul), pipe installations, ditch and headwall cleanout, application of surfacing, grading, and brushing. Some additional culverts will be installed on existing roads to bring the roads up to the latest Forest Practice standards. Construction, reconstruction and rock haul will be restricted from November 1 to April 30. Pit run ballast will be provided from an off site private borrow pit, and processed rock is to be acquired from a commercial source.

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map. See also color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description:

T28N R2W S1
T28N R2W S12

b. *Distance and direction from nearest town (include road names):*

This proposal is located approximately 11 miles north of Quilcene by road. Both units are located off SR 104 with Unit 1 at milepost 1.3 (on the PT-O-4000 road) and Unit 2 at milepost 1.7 (on the PT-O-3000 road system).

c. *Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")*

WAU Name	WAU Acres	Proposal Acres
DISCOVERY BAY	89139	168.6

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)*

This proposal is located in the Snow Creek sub-basin of the Discovery Bay WAU. The Snow Creek sub-basin is located at the south end of the WAU, which is common to the Eagle Creek, Salmon Creek and Snow Creek drainage basins. The Discovery Bay WAU consists of 60,658 acres of mixed ownership lands. DNR managed lands represent 12% of the total land base within the WAU. A substantial portion of the headwaters of the Snow Creek watershed lies within the Olympic National Forest. The current stand conditions on State land within the WAU reflect 33% in the 0-24 year age class, and 67% in the 25+ year category. These age classes were selected to reflect upon what is considered hydrologically mature. Completion of this proposal and other planned and active sales in the WAU would shift this number to 38% and 62% respectively. This is based on 2002 data updated for sold sales from 2002 to 2004 and does not take into account the stands that have matured into the 25-year-old threshold since 2002, or that will cross over into this age class during the expected contract term.

The general surrounding landscape is one of mixed forestland ownership that is managed as commercial forest and small (most are between 5 and 7 acres in size) private ownership. The sale area is contained within a 1,060-acre block of State ownership that is of various ages. Pope Resources (Olympic Resource Management) owns approximately 3,360 acres of land to the east of the proposal. This ownership is commercial forest of various ages. It is composed of small patches of mature timber intermixed with young forest plantation. The Lucille Brown Trust owns approximately 80 acres to the northeast of Unit 1 and approximately 20 acres to the northwest of Unit 2. The 80 acre parcel was harvested approximately 10 years ago and the 20 acre parcel was partial cut within the last decade. The exact future plans for adjacent private landowners are not known, however, the nature of most activity on the adjacent private forestlands is one of continuing commercial forest management. The closest home site in this area is located 1200 feet to the northwest of Unit 2. Most of the small private parcels to the west of Unit 2 have not been developed. However, private lands in this vicinity have exhibited an increase in development in recent years.

Future timber harvest activity in the surrounding landscape is anticipated to continue. It is estimated that 631 acres of State land were harvested within the Discovery Bay WAU over the past twelve years. These sales are scattered throughout the WAU. An additional 336 acres of planned and/or sold sales will have been harvested by 2005. This equates to a harvest rate of approximately 1% of State lands in the WAU per year. Future harvest planning/timing within the block of State land in Sections 1, 12, and 13, Township 28 North, Range 2 West, W.M. is contingent upon green up policies and the availability of additional harvestable timber within the District landscape.

All current and future activities will be conducted according to the State's HCP, Forest Resource Plan, and State Forest Practices Rules, and are expected to mitigate for any potential adverse cumulative effects. Several measures have been taken to reduce the risk of negative environmental impacts. Twenty-three percent of the gross proposal acreage will remain in leave tree areas, RMZs, Wetland Management Zones (WMZs), and unstable slope protection. Dispersed and clumped leave trees will provide structure for many wildlife species to use. The density of leave trees will average 8.26 trees per acre for the sale. The excess trees were left in order to protect the wetlands, and streams and to meet distribution requirements. Large dominant leave trees will provide future nesting and roosting options for eagles. Snags and down wood will also be provided. Assessments have been performed to evaluate the potential use of the proposal area by threatened and endangered species, and by species of concern. The result of these assessments has been the development of an Eagle Management Plan that will meet the needs of the Bald Eagles within the Crocker Lake breeding territory near Unit 1. A DNR geologist has also examined the proposal area. This site visit was performed to ensure that unstable slopes are excluded from the harvest area, and to ensure that the proposed management activities will not significantly increase the risk of environmental impacts. Road network planning and road design have been performed in order to minimize the amount of road construction needed, and to ensure the quality of existing and newly constructed roads. Timing restrictions on road construction will help to maintain the integrity of existing roads, and reduce the potential for off site movement of sediments. Ground yarding operations shall be suspended during periods of severe wet soil conditions when rutting of skid roads begins. The use of cable, shovel and tracked yarding equipment will help to prevent rutting, minimize soil disturbance, and protect water resources. The yarding has been planed to avoid the need to fall timber into, or to yard timber across, the RMZ in Unit 2. Timing restrictions on shovel and tracked yarding equipment will also minimize compaction and other impacts to the soil and water resources. An additional consideration in sale design was the need to protect the City of Port Townsend waterline in Unit 1. Forest cover analysis was performed to ensure adherence to current policy on hydrologic maturity within WAU boundaries. G.I.S. landscape reports were checked to evaluate the location of this proposal relative to the rain-on-snow zone mapping units.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☐Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

1) *General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).*

The Discovery Bay WAU is located on the Olympic Peninsula along the Strait of Juan De Fuca. There are 60,658 acres total and DNR ownership makes up 12% of the land base in the WAU. The elevation range is in transition from the lower, rolling topography, to the foothills of the steeper mountainous terrain. The north half of the WAU is made up of relatively flat low elevation lands in use as rural residential, agriculture, and commercial forest. The south half exhibits mostly forestlands, of which the USFS is the largest landowner. The maximum elevation is 4,196 feet at the top of the watershed on national forest land. The steeper slopes in the WAU are found in the southern half, with the exception of the 50 –150 foot bluffs along the Strait. The lower elevations have generally more gentle slopes with and more intense land use patterns. The entire WAU is within the Olympic rain shadow and receives annual precipitation ranging from less than 20 inches on 43% of the land to a maximum 45 inches on l % of the acreage. Forests have extensive burn history throughout the WAU with fire return intervals among the lowest in western Washington. The dominant forest type is Douglas fir with associated western red cedar, western hemlock, grand fir, red alder, bigleaf maple, pacific madrone and bitter cherry. The managed forestlands are primarily regenerated with Douglas fir and red alder. This proposal falls within the western hemlock vegetation zone (TSHE).

2) *Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).*

The proposal is located in the southern portion of the WAU, where the majority of the land use is commercial forest. The sale is located in low rolling terrain. The maximum elevation of the sale area is 651 feet, and the sale is not located in the peak rain-on-snow zone.

b. What is the steepest slope on the site (approximate percent slope)?

Most of the sale area is gently rolling with maximum slopes around 35%. The incised draw in Unit 2 has sideslopes up to 50% in a few places and one short stretch with a sideslope of 110%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
0052	GRAVELLY LOAM	15-30	58	INSIGNIFIC'T	LOW
0056	GRAVELLY SANDY LOAM	0-15	47	INSIGNIFIC'T	LOW
0064	GRAVELLY SANDY LOAM	15-30	15	INSIGNIFIC'T	LOW
2000	GRAVELLY SANDY LOAM	15-30	10	INSIGNIFIC'T	LOW
6403	SILT LOAM	0-15	1	INSIGNIFIC'T	LOW

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) Surface indications:

Field observations indicate there are no features of slope instability that are apparent within the sale area. Several areas of historical or potential instability were located and the sale boundaries were located to avoid these areas.

A small, shallow rapid slide was observed in association with the incised portions of the steeper Type 5 drainage on private property just north of the sale area. Soil movement is in these areas is usually initiated by down cutting of the stream channel, followed by erosion along the base of the incised portion of the channel wall. This feature measures 10 feet high and 5 feet wide.

Small, shallow rapid slides were also observed in association with the incised portions of the steeper Type 3, Type 4 and Type 5 drainage on the main west flowing stream in Unit 2. Soil movement is in these areas is usually initiated by down cutting of the stream channel, followed by erosion along the base of the incised portion of the channel wall. Some of these slides have occurred recently and others are more historic in nature. Most of these features measure less than a tenth of an acre in size.

There is an old skid road crossing a draw in the old cutting unit immediately to the south of the sale. Fill from this old skid road is cracked and settling. There is a incised draw beginning at this location with some evidence of small sideslope failures.

2) Is there evidence of natural slope failures in the sub-basin(s)?
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

Natural slope failures occur within incised draws and gorges where streams undercut the toe of the slope, causing some slides to begin. Slope failures also occur on steep slopes underlain by unstable, glacial soils during periods of extreme saturation. Both of these conditions exist within the steeper gorge area of the Snow Creek drainage, located in Sections 10 and 11 of Township 28 North, Range 2 West, W.M. These failures are shallow-rapid in nature and can be viewed throughout the Snow Creek drainage and some of its tributaries in this area. Deep-seated failures occur on over steepened bluffs along the shorelines of the Strait of Juan De Fuca where the tidal action has eroded the toe of the slope.

3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*
Associated management activity:

Slope failures have occurred where timber harvest and road construction has been performed on extremely steep unstable slopes. Road failures are primarily associated with older, poorly constructed sidecast roads.

4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?
☒*No* ☐*Yes, describe similarities between the conditions and activities on these sites:*

No. Deeply incised drainages are found in proximity to Unit 2, but have been excluded from the sale. Soil types found on this proposal are as follows: Alderwood 0052, Alderwood 0056, Alderwood 0064, Everett 2000, Quilcene 6403. The landform is one of a gently rolling to hilly topography, with slopes interior to the sale measuring in the 0-40% range. The average slope is estimated at 15 % in Unit 1 and 30% in Unit 2. The mass wasting potential is listed as insignificant to low on the proposal, and the erosion potential is low. A DNR geologist has examined the proposed sale area, and areas of slope instability were removed from the proposal.

5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.

A Geologic assessment has been performed to ensure that areas of potential slope instability have been excluded from the proposed sale area, and that proposed management activities will not significantly increase the risk of

mass wasting in the general area. Areas that were identified as unstable have been excluded from the sale area. Roads to be constructed have been located on relatively flat ground, well back from the main topographic break into the nearby drainages. Ditch water is to be diverted onto stable locations on the forest floor, and the installation of sufficient cross drains will maintain natural drainage patterns.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: 1.2 Approx. acreage new landings: 1.8 Fill source: On site native material, glacial gravel from privately owned pit, privately owned commercial rock source.

Road work will require application of ballast and surfacing materials in the following approximated quantities: 4,087 cubic yards of pit run material from the Tarboo Powerline Pit, plus 1,927 cubic yards of surfacing material and 24 cubic yards of rip rap from a commercial source. Acreage of roads based on a 15 ft subgrade width for new construction only. Acreage of landings is based on 100 ft x 100 ft impacted area.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

A small amount of surface erosion incidental to freshly exposed soils is anticipated.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

1% of the sale area will be in permanent road running surface as defined by compacted pit run ballast or crushed surfacing. This is based on a 12 ft running surface on newly constructed roads, and a 50 ft X 50'rocked landing area.

h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

Roads will be constructed with properly located ditches, ditchouts and cross drains to divert water onto stable forest floor and/or into stable natural drainages. There are 8 culverts being installed on existing roads to bring them up to the new Forest Practice specifications. Construction, reconstruction and rock haul will be restricted from November 1 to April 30 when the potential for erosion and sediment movement is at its peak. Use of harvesting equipment will be limited to cable logging on the wetter and steeper portions of the sale area. The use of rubber tired skidders will not be allowed in order to prevent excessive rutting and minimize soil disturbance. Use of tracked skidders will be restricted from November 1 to April 30 in order to minimize compaction and rutting. Use of shovels will be restricted from December 1 to February 28 in order to minimize compaction and rutting. Some skid trail segments will be abandoned, and will have water bars installed as needed to control water flow. Operations shall be suspended during periods of wet weather or wet soil conditions when rutting of skid roads begins. In Unit 1 leave tree buffers were placed on a Type 5 stream and on a forested wetland at the head of a type 5 stream. A total of 4 acres or 5 percent of the Unit 1 proposal area was included in the buffers. A 2.3 acre leave tree clump was placed behind the wetland so that timber did not have to be yarded over or through the wetland and stream buffer. Within Unit 2 a primary concern was to provide protection to a Type 3/4/5 stream that exhibits steep side slopes with potentially erosive soils. The stream runs through the entire sale area. As a result, the applied leave tree buffers on this stream are substantial. Another Type 3 stream is located on the west edge of Unit #2. This also has steep side slopes and a substantial leave tree buffer. A third Type 3 stream is located to the south of the main draw flowing into the main stream. This is a very short stream with a smaller total leave tree buffer. Two small (less than quarter acre) forested wetlands at the head of two of the Type 5 streams were also buffered. As a result of these three streams, a total of 25.3 acres or 32 percent of the Unit 2 proposal area was set aside for these buffers. A unstable area was located on the south side of the type 4 segment of the second stream. A 2.6 acre area was removed from the sale to protect this unstable area. This resulted in a total of 35 percent of the Unit 2 proposal area being set aside.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling,* automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Insignificant amounts of engine exhaust from logging equipment and dust from passage of log trucks. Logging slash, if burned, will be burned according to the State's smoke management plan.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

None.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map and forest practice base maps.)*

Unit 1

A small forested wetland was located in the northwest of Unit 1. It has approximately 0.06 acre of standing water. The adjacent area has subsurface water and wetland soils and plants. The entire wetland is 0.86 acres and was given a 100 foot buffer. No trees will be removed from this WMZ.

There is a leave tree area located behind the wetland. The wetland has a small Type 5 stream exiting the north side and flowing in a north-northwesterly direction.

Another Type 5 stream was found along the west end of the north unit boundary. The stream has some patches of low wet ground immediately adjacent to it. A small number of wetland type plants were discovered in these patches. The largest patch was less than 10 feet across. The total area involved if all the patches were added

would be less then 0.1 acre. While the patches do not meet the formal definition of a forested wetland the decision was made to protect them. The sale boundary was placed 25 feet from this stream to buffer it and the low areas. This will eliminate the possibility of soil rutting and compaction in an potentially sensitive area.

Unit 2

Two Type 3 streams, one Type 3/4/5 stream, seven Type 5 streams and two non-typed streams are found in or near this unit.

A unnamed Type 3 stream is located on the west edge of Unit #2. This stream is mostly located on private land outside the proposal area. There are a few short segments that go onto State land. This stream was given a 150 foot site index RMZ. This RMZ forms much of the west boundary of Unit 2. It flows north roughly parallel to the sale boundary then near the northern edge of the sale turns to the west and flows into Crocker Lake.

A second unnamed stream runs from the east boundary of the unit to the west boundary through the middle of the sale area. It is a Type 5 where it enters the sale, then becomes a Type 4 stream 1000 feet below the road, then becomes a Type 3 approximately 1400 feet below the road. The Type 5 portion of this stream is located in a steeply incised draw with sideslopes of 40-45% below the road and 40-60% above the road. There is a small (10' tall x 5' wide) shallow rapid landslide located in this draw just outside the State ownership to the east. This draw was given a leave tree area to protect the steep sideslopes. The Type 4 portion was given a 100 foot RMZ on the north side. The south side of this RMZ has a potentially unstable area located above it and the sale boundary along the south side of the RMZ was moved above the potentially unstable slopes to protect them. The actual location of the boundary was determined after consultation with a DNR geologist. The Type 3 portion of this stream was given a 150 foot site index RMZ. This stream departs the west side of the proposal area about 150 feet south of the northwest property corner and flows into the west stream about 50 feet after leaving State ownership.

A third unnamed Type 3 stream is located to the south of the main draw flowing west into the main stream. It is formed by the confluence of several Type 5 streams in the southwest portion of the unit. The Type 3 portion was given a 150 foot site index buffer.

There are several Type 5 streams.

A Type 5 stream originates from a less than quarter acre forested wetland in a basin on the south side. It flows northwest, periodically going underground, into the main Type 3/4/5 stream at the Type 3/4 break. Due to its origin next to a unstable area and in a basin with some unstable slopes this entire basin and stream were protected by expanding the sale boundary above the RMZ to encompass this area. The exact location of the boundary was determined after consultation with a State geologist.

A Type 5 stream enters the northern boundary of the unit approximately 1700 feet down from the road. It flows in a general southwest direction. It enters the main Type 3 channel approximately 1800 feet below the road. The stream has a 32% gradient for 60 feet before entering the main stream. This stream, when visited in early March, had a few segments of running water but went underground in several spots. Following the stream outside the sale boundary to the north of the proposal the ground became very wet. Fifty feet outside the sale boundary there was subsurface water within a few inches of the ground surface. This is in a 18 year old plantation that predates the era of wetland protection. There is no evidence of a wetland on the inside of the sale boundary, however a leave tree clump was placed on the boundary near this location to offer some protection and to protect a group of the largest trees in that portion of the unit.

Two non-typed swales enter the unit on the south boundary, approximately 1000 and 1150 feet down from the road. The easternmost one is a small trickle which frequently goes underground. Approximately 450 feet from the unit boundary it goes underground at the bottom of the steep section of the hill and could not be found again. It is located in a small swale that flattens out at the bottom of the steep portion of the hill. The water ends above the location of the wetland so may be part of the water supply for it. The western water is more significant. It enters the sale in a steeply incised draw. Outside the sale area, in a previously logged unit, a skid road crosses the draw. This fill is beginning to fail. This failure has no possibility of delivering sediment to a fishbearing water. This is because this water is similar to the other in that the draw ends and the water goes underground at the bottom of the steep portion of the hillside approximately 200 feet from the unit boundary. No evidence of surface water movement was found on the hillside below this point. Again, the swale ends above the wetland and another Type 5 stream so there is probably subsurface flow but it will not transport sediments into the water of any streams below it. A leave tree area was put in around this swale to protect it.

There is a swale in the northwest corner of the unit. Field examination during the wet season found a no running or standing water until nearly out of the proposal area. Then there was just a trickle. The area where this flow occurred is included in the lower RMZ and is not part of the sale area.

To the east of the PT-O-3130 landing is a small swale with a Type 5 stream in it. This stream flows northerly into the southern Type 3 stream.

There is a swale that enters the sale about the southwest corner of the unit. It has a small amount of water pooled in the bottom of it during the rainy season but no flow at the unit boundary or in the stretch inside the unit. It then crosses into the RMZ for the west stream. After it enters the RMZ it acquires more water and begins to flow down the swale as a Type 5 stream. When it gets to the bluff above the Type 3 it begins to cut a steeper draw. There is no summertime water flow. The draw enters the west Type 3 channel about 80 feet from the property corner. The gradient is about 50% at this point. This entire Type 5 stream is located within the RMZ of the Type 3 stream it flows into

The southwest portion of the sale is generally low. It lies below the two parallel untyped swales and receives water from them. There is a small (less than quarter acre) forested wetland with a Type 5 creek leading out of it. Another Type 5 creek starts on the other side of the area. The two of them flow together for a short distance. Then they are joined by the Type 5 stream from just east of the PT-O-3130 landing. After they join the resulting stream meets the physical criteria for a Type 3 stream. An August visit found no water present. It was given protection as a Type 3 stream based on the physical characteristics. A 150 foot site index buffer was applied to the Type 3 portion of these streams and the wetland had a leave tree clump placed around it to protect it.

There is a seep approximately 600 feet below the road on the south side of the main drainage. Some wetland plant indicators (i.e. skunk cabbage) were observed here. Some indicators of unstable ground were also present. The area has had some small shallow failures and debris flows in the past and fairly recently. The buffer on the Type 4 stream at this point was enlarged to include this entire feature.

Contract language will require that no equipment may operate within the delineated wetland edges, protective leave tree areas, or within the RMZs. The same will hold true for prohibiting timber to be felled into, across, or yarded through these areas.

a) Downstream water bodies:

Unit 1 waters are tributary to several unnamed streams which are tributary to Snow Creek and Discovery Bay. Unit 2 waters are tributary to an unnamed stream, Crocker Lake, Andrews Creek, Snow Creek and Discovery Bay.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Forested wetlands <0.25 acres in size.	N/A	2	WMZ not required. However, leave tree clumps were placed to offer protection.
Forested wetland >0.25 and <1.0 acre in size	N/A	1	100’
Type 3 Streams	F	3	150’
Type 4 Stream	Np	1	100’
Type 5 Streams	Ns	9	varies

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

See answer to B.3.a.1. above.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒*Yes (See RMZ/WMZ table above and timber sale map.)*
Description (include culverts): Rock will be added to the road surface over an existing fill over a culvert in a Type 5 water in Unit 2. A high quality surfacing will be used to reduce the chance of sediment being delivered to the creek from the passage of vehicles. Approximately 10 cubic yards of sidecast will be removed from above the creek at this location and 10 cubic yards of rip-rap will be placed in its place. This is to reduce the chance of a failure at this point allowing material to go into the stream. Harvest operations will occur within 200 ft of the wetlands and streams. There will be no activity within the WMZ’s. No trees will be harvested within the RMZs. Contract language will require that no equipment may operate within the protective leave tree areas around the forested wetlands, or within the RMZs or WMZs. The contract will also prohibit timber to be felled into, across, or yarded through these areas. The proposal requires cables to be hung across the Type 3, 4, and 5 streams and timber to be yarded over some Type 5 streams. A site visit has been conducted with a WDFW habitat biologist and a HPA will be issued.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☒*No* ☐*Yes, description:*

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒*No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒*No* ☐*Yes, type and volume:*

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

It is possible that surface erosion is occurring in areas as described in Part B.1.d.2. The GIS database shows that only 2 percent of the soils in the Discovery Bay WAU have medium to high surface erosion and mass wasting potential. Soils reports also indicate that the soil types present within the boundaries of this proposal have low erosion potential. Based on the sale design, off site movement of sediment should be minimal.

8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?
☐*No* ☒*Yes, describe changes and possible causes:*

There are some channels in the WAU which show evidence of accelerated aggradations due to a combination of factors including surface erosion, slides and increased peak flows. These changes are attributed to both natural events and human activity and occur throughout the reach of some streams in the WAU. There is evidence of down cutting in the upper end of the stream channel in the middle of Unit 2. There is a little slumping immediately adjacent to the stream in this upper end. Approximately 600 feet below the road an unstable feature was observed on the south side of the channel. There is a old slump associated with a side slope seep here.

Below this the sideslopes into the creek were beginning to show signs of soil movement and potential instability on some of the steeper sideslopes. There is a small amount of groundwater seepage in this area. The unstable area ends with a Type 5 stream channel initiating in a spring in a retrogressive headwall. Minor failures have occurred on this headwall. Debris has not traveled far. The entire unstable area was excluded from the sale. The sale boundary was placed after consultation with a State geologist.

9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*
☐*No* ☒*Yes, explain:*

A small increase in surface runoff is anticipated. Runoff is expected to return to prehavest conditions relative to this proposal within 25 years. Given the topography, soil types and protective measures being taken, this proposal should have little affect on stream and water quality.

10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?* The G.I.S. database indicates that there are 4.4 miles of road per square mile in the Discovery Bay WAU. No sub basin data is available.
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒*No* ☐*Yes, describe:* There are likely cases where this has occurred elsewhere in the WAU. There is a small amount of water in the ditch in Unit 1 where the road crosses the waterline. It is unknown whether this is subsurface water from above the road or leakage from the waterline.

11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not,* ***STOP HERE*** *and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☒*No* ☐*Yes, approximate percent of WAU in significant ROS zone.*
Approximate percent of sub-basin(s):

12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*

13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
☐*No* ☒*Yes, describe observations:*

There have been increases in peak flows associated with small drainage basins that contain a high percentage of young (less than 25 years old) timber which have created channel scouring. Specific instances of this occurring were not identified directly adjacent to the proposed timber sale units. The closest example would be some basins within the reach of the Salmon Creek sub-basin.

14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*

A small increase in peak flow is anticipated as a result of this proposal. Negative impacts are not anticipated based on the following: the size of the harvest area in relation to the acreage contained within the WAU and sub-basin, the ability of the proposed harvest area (and surrounding forest land) to regain hydrologic maturity through time, and the buffering effects of riparian and wetland management zones. All current and future activities will be conducted according to the State's HCP, and are expected to mitigate for any potential adverse cumulative effects.

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☐*No* ☒*Yes, possible impacts:*

There are seven surface water rights registered with the Department of Ecology that are potentially located downstream of this proposal. One is located in Section 12 and two in Section 2, of Township 28 North, Range 2 West, W.M. and four in Sections 35 and 36 of Township 29 North, Range 2 West, W.M. It is uncertain if they are actually downstream. There is not enough information provided in the Special Concerns Report to determine their exact locations.

There is a potential for some increase in water yield downstream of the proposal. Areas of potential slope instability that may be associated with incised stream channels have been described in part B.1.d.1&4. above, and have been excluded from the proposal. Based on the factors described in parts B.3.a.9. and B.3.a.14, negative impacts resulting from increased flows is not anticipated.

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*

Road network planning and road design have been performed in order to minimize the amount of road construction needed, and to ensure the quality of existing and newly constructed roads. The spatial forest cover analysis was examined to ensure adherence to current policy on hydrologic maturity within WAU boundaries. G.I.S landscape reports were checked to evaluate the location of this proposal relative to the rain-on-snow zone-mapping units. The overall sale design will also help to minimize impacts as noted by the difference in net sale acreage relative to the proposal area acreage that was initially considered for harvest. Twenty-three percent of the proposal area has been identified for protection of streams, wetlands, unstable slopes and leave tree clumps. This represents a substantial reduction in the harvestable land base with respect to the immediate landscape associated with this proposal. Prompt reforestation will initiate a move towards the recovery of hydrologic maturity.

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Does not apply.

3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?
☐*No* ☒*Yes, describe:*

There is one groundwater right registered with the Department of Ecology located in Section 2 of Township 28 North Range 2 West. It is uncertain if it is actually downstream. There is not enough information provided in the Special Concerns Report to determine its exact location.

A small increase in groundwater volume is anticipated during peak storm events. There is a potential for some increase in water yield downstream of the proposal. Based on the factors described in parts B.3.a.9. and B.3.a.14, negative impacts resulting from increased flows is not anticipated.

a) Note protection measures, if any.

See B.3.a.15 & 16 above.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water will be collected by ditches, ditchouts and cross drains and diverted to stable forest floor material.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Does not apply.

a) Note protection measures, if any.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

Also see B.1.h. and B.3.c.1 above. Yarding equipment restrictions and timing restrictions for roadwork will reduce the potential for off site movement of sediment during the period of late fall through early spring when surface runoff is at its peak. The sale design, including harvest system design and road construction considerations, should maintain natural flow patterns.

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☐*cottonwood,* ☐*western larch,* ☐*birch,* ☐other:
☒evergreen tree: ☒*Douglas fir,* ☒*grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☐*Sitka spruce,* ☒*red cedar,* ☐*yellow cedar,* ☐other:
☒shrubs: ☒*huckleberry,* ☒*salmonberry,* ☒*salal,* ☒*other: ocean spray, Oregon grape, sword fern*
☐grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☐*devil's club,* ☒other: sedge
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

This proposal involves harvesting 129.1 acres of 69-97 year old mixed species heavy to Douglas fir and red alder, with varying amounts of western hemlock, red cedar, and bigleaf maple. The species composition will not be significantly changed in the WAU, as the area will be reforested with similar species. A minimum of eight trees per acre will be left scattered and clumped to provide structure for wildlife use. Leave trees include at least two trees per acre of the largest trees on site. Defective trees that have been identified as valuable for wildlife have also been left. In identifying these trees, a number of very large trees were found. All trees over 50 inches in diameter were marked. Approximately 3,354 thousand board feet of timber will be removed. Most of the conifer and deciduous trees will be harvested, with the exception of those left distributed throughout the sale area for wildlife purposes. Shrub and herbaceous plants will be disturbed during logging, however most species will recover and respond favorably to the increase in available sunlight. There will be a transition from more shade tolerant species to intolerant species.

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")

This proposal contains stands that fall within the western hemlock vegetation zone (TSHE). The stands surrounding Unit 1 are mostly private; to the northeast is a 80 acre private parcel that is approximately 5-6 years old. To the east is a private plantation approximately 25 years old. To the southeast is a stand of State timber that is approximately 97 years old. This is a dense stand of smaller trees with the major species being Douglas

fir and red cedar. There is very little understory vegetation. To the southwest is the State Route 104 highway right of way. The other side of that is a 44 acre State plantation that is 9 years old. To the west is a private plantation that ranges in age from 18 to 30 years. On the west portion of the north edge is a 22 year old State plantation. Unit 2 has 18 year old State plantations to both south and most of the north. To the east is a private plantation that is approximately 25 years old. The west side has a number of 5-6 acre parcels that are in the hands of multiple small landowners. One of these parcels has a residence on it. There is a 20 acre block of private timber to the west end of the north boundary that was partial cut a few years ago.

2) Retention tree plan:

Leave tree selection criteria and leave tree distribution strategies were chosen to satisfy a myriad of objectives. These objectives vary unit to unit.

Unit 1 had no old growth residual trees found. However, the unit contains an abundance of older age class dominants that are transitioning into trees with old growth characteristics. These "transition" trees are estimated to range in age from 120 to 150 years. These trees exhibit large crowns; large diameter limbs, and are included in the largest diameter classes within the unit. 352 trees mostly of this type have been marked for leave. The availability of a well distributed supply of such ideal leave tree candidates dictated a 49% clumped, 51% individually marked strategy for this unit. Within Unit 1 a primary concern was to provide protection to a forested wetland. The wetland size was 0.86 acres. A 100' wetland management zone was applied. Leave trees have been claimed for 65 trees located within this wetland management zone. These trees would otherwise be available for harvest, as they represent excess basal area to the required minimum of 120 square feet needed to maintain wetland function. Due to the location of this wetland, a clump of trees behind it would be difficult to remove without resource damage. This clump was left as a leave tree area to ensure that no damage will occur. There are an additional 6 clumps within the unit. One clump captures a number of snags near the water line. The other clumps capture concentrations of the "transition" type trees. Due to the high number of these transition trees, additional trees beyond the required 8 per acre were left. In total there are 7 leave tree clumps associated with Unit 1 that total 3.47 acres and contain 236 trees plus 352 marked trees and 65 excess trees in the wetland for a total of 684 leave trees.

Within Unit 2 a primary concern was to provide protection to streams that exhibit steep side slopes with potentially erosive soils. A total of 25.3 acres or 32% of the Unit 2 proposal area was set aside for RMZ's. Protection of other features such as two Type 5 streams with incised draws, two small (under quarter acre) forested wetlands and protection of unstable areas resulted in a clumping strategy that provides the bulk of the green tree retention for this unit. Added to the acres in the RMZ's is 0.3 acres of leave trees clumped around a small wetland, 3.4 acres clumped around a Type 5 stream with a deeply incised draw, 2.6 acres for unstable slope protection and 0.5 acres set aside for other leave tree clumps for a total of 32.1 acres or 40% of the proposed unit area to be set aside. An additional 83 individual leave trees were marked to achieve the required distribution of trees across the unit. No old growth trees were found. There are a few large old stumps that were left from when the stand was last logged. There are several older age class dominants that are transitioning into trees with old growth characteristics. These "transition" trees are estimated to range in age from 120 to 150 years. These trees exhibit large crowns; large diameter limbs, and are included in the largest diameter classes within the unit. Eighty-three trees of this type have also been marked for leave. There are also a few small, suppressed red cedar trees with some burn scars. As the sale was burned at the time it was last logged, these are also presumed to be "transition" trees and have been marked for leave. Due to the number of areas needing protection and the trees necessary to achieve required spacing a few extra trees above the required 8 per acre were left. In summary, there are 5 leave tree clumps with a total of 347 trees plus 83 individual marked trees for a total of 430 leave trees in Unit 2.

In both units individually marked leave trees were selected to represent the dominant size and crown class, or to capture unique structure. An effort was made to identify and select the older, larger "transitional" trees. Snags that can be safely left standing will remain. A down log component will also be provided by requiring all trees down for five years or more be left undisturbed. These reserve trees will help to provide future multi-layered canopies and general habitat diversity. They will also help to reduce the visual impacts from regeneration harvests.

c. List threatened or endangered *plant* species known to be on or near the site.

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Dispersed individual trees and scattered clumps of trees will be left at an minimum density of 8 trees per acre after harvest.

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☒hawk, ☐heron, ☒eagle, ☒songbirds, ☐*pigeon*, ☐other:
mammals: ☒deer, ☒bear, ☐elk, ☐beaver, ☒other: bobcat
fish: ☐bass, ☒salmon, ☐trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐*talus slopes*, ☐*caves*, ☐*cliffs*, ☐*oak woodlands*, ☐*balds*, ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
1	44959	MARBELED MURRELET: Reference No: 2021524	THREATENED	THREATENED
1	44959	BALD EAGLE	THREATENED	THREATENED
2	43610	MARBELED MURRELET:	THREATENED	THREATENED

		Reference No: 2021169		
2	43610	BALD EAGLE	THREATENED	THREATENED

T&E Species and Wildlife Habitat
A check of the DNR's "TRAX" system, Special Concerns Report, and PHS database indicates the presence of two threatened wildlife species in the general proposal area, specifically the Bald Eagle, and marbled murrelet. Two other threatened species, Chinook Salmon (Puget Sound Run) and Chum Salmon (Hood Canal Summer Run) are known to be the general area of the proposal.

The proposal falls within two ESU's with threatened salmon stocks. These listed runs are the Chinook salmon in Puget Sound, and the Chum Salmon Hood Canal Summer Run. It is anticipated that the riparian zone strategies under the HCP will provide for the habitat needs of these species.

The sale has been screened for spotted owls and is not located within any spotted owl circles.

There are 568 acres of reclassified habitat in the WAU that have been released for harvest. The sale contains 76 acres of released reclassified marbled murrelet habitat. The sale does not contain occupied habitat. Nor is there occupied habitat in close proximity to the site.

There is a old bald eagle site located just south of SR 104 across from Unit 1. A eagle plan was written in 1993 when the area adjacent to the site was logged. The nest tree that the eagles were using then has blown down in the years since that sale. The eagle plan has been updated by the Washington Department of Fish and Wildlife (WDFW). Both units of this sale are outside the area required to be protected for this site. Many large dominant trees were found scattered throughout the proposed unit. 352 of these trees were marked to be left as individual dispersed trees and 332 will be left in clumps and the wetland. These leave trees should help provide for future habitat needs for eagles and other wildlife.

A small amount of Pileated woodpecker use is evident in the sale area. An attempt will be made to leave snags on site to provide potential nesting and feeding opportunities.

c. Is the site part of a migration route? If so, explain.
☒*Pacific flyway* ☐*Other migration route:* *Explain if any boxes checked:*

d. Proposed measures to preserve or enhance wildlife, if any:

Dispersed and clumped leave trees will provide some structure for many wildlife species to use. The minimum density of leave trees will average eight trees per acre for the sale. Snags and down wood will also be provided. The new open cover type created by the harvest will enhance foraging opportunities for some wildlife species. Riparian management zones, wetland management zones, and adjoining unstable slope protection will provide ample buffering along fish bearing streams. Riparian obligate species should benefit from these large leave areas. The HCP riparian strategy will provide old forest conditions across the landscape over time.

1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.
Species /Habitat: Protection Measures:
Species /Habitat: Protection Measures:

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Does not apply.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Does not apply.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

The operating of heavy machinery will pose a minimal level of hazard. Harvest operations will increase the risk of fire for a period of time. Contract language and State burning rules will require operations to be performed in a manner that will reduce the risk of fire. Fire suppression tools and equipment will be made readily available on site. Slash pullback hazard abatement will be required along State Route 104.

1) Describe special emergency services that might be required.

Does not apply

2) Proposed measures to reduce or control environmental health hazards, if any:

Hazard abatement will be required along the south of Unit 1 in proximity to State Route 104. Contract language will require that preventative measures be taken to avoid on site disposal, or spilling of hazardous materials. The reporting and cleanup of any spills of petroleum based products or other waste will also be required. The PT-O-4000 road has been impacted in the past by garbage dumping. It will be gated to avoid future impacts.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Does not apply.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Noise will be created from chainsaws; heavy equipment and log truck traffic during daylight hours while the sale is active. Noise will also be created from operating equipment in the rock pit during road construction.

3) Proposed measures to reduce or control noise impacts, if any:

None at this time.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*

The current use of the site is timber production. Adjacent properties are used for timber production except the small private lots to the west of Unit 2. These lots have not been developed. Current plans for them are unknown. There is a underground waterline owned by the City of Port Townsend located in the northern portion of Unit 1.

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

There are no structures on the site. The nearest structure is located approximately 1200 feet to the northwest of Unit 2 on private land.

d. Will any structures be demolished? If so, what?

Does not apply.

e. What is the current zoning classification of the site?

Commercial forest.

f. What is the current comprehensive plan designation of the site?

Commercial forest.

g. If applicable, what is the current shoreline master program designation of the site?

Does not apply.

h. Has any part of the site been classified as an “environmentally sensitive” area? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Does not apply.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Proposed activities are compatible with land use designations. A meeting was held with the City of Port Townsend Public Works Department and the yarding plan and some contract language have been developed to meet their concerns.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Does not apply.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Does not apply.

c. Proposed measures to reduce or control housing impacts, if any:

Does not apply.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?

Does not apply.

b. What views in the immediate vicinity would be altered or obstructed?

1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?
☐*No* ☒*Yes, viewing location:*

Portions of Unit 2 may be visible to a few houses in the vicinity of Crocker Lake.

2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?
☐*No* ☒*Yes, scenic corridor name:*

Portions of this proposal may be visible from State Route 104 and U.S. Highway 101.

3) How will this proposal affect any views described in 1) or 2) above?

The majority of the sale area will be temporarily void of timber until regeneration is established.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Unit 1 is on the hill above SR 104. There is a steep cut slope for the highway and the unit does not begin until a little way back from the top of this slope. This will block views of most of the unit. There are some small trees, shrubs and leave trees along the lower edge that will help to block this view. On those areas that are visible, dispersed and group retention of leave trees will help break up the up the outlines of the even aged harvest. Prompt reforestation will limit the length of time the harvest area will be visible.

The lowest portion of Unit 2 will not be visible because of the height of the trees left in the lower RMZ. On those areas that are visible, dispersed and group retention of leave trees will help break up the up the outlines of the even aged harvest. The RMZ in this unit is substantial and will also help break up the outline of the unit. Prompt reforestation will limit the length of time the harvest area will be visible.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Does not apply.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Does not apply.

c. What existing off-site sources of light or glare may affect your proposal?

Does not apply.

d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

There are informal opportunities for hiking, bird watching and hunting. Logging roads in the area are also used for motorcycle riding, mountain bike riding, horseback riding and ATV riding. Hikers and riders were observed on the logging roads in the vicinity of Unit 2 on several occasions.

b. Would the proposed project displace any existing recreational uses? If so, describe:

Yes, the proposal would temporarily displace some recreational activity. The area will not be available to recreational use during harvest activity. Permanent displacement of these uses is not anticipated.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No measures will be taken since impacts are thought to be minimal. The new roads to be constructed as part of this proposal will probably be used for informal recreation.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

A check of DNR's TRAX system indicates that there are no known places or objects.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None.

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

A pile of rocks that appeared unusual was found. Olympic Region's Cultural Resource Technician was asked to examine them and determined them to have no significance.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

State Highway 104 and U.S. Highway 101. Access will use existing road approaches.

1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?

No. The transportation system is designed to accommodate heavy commercial truck traffic. The forest roads were designed to accommodate commercial timber extraction and the sale will be consistent with past levels of use.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Does not apply.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Does not apply.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

This proposal will involve 3,611 ft of new logging road construction, 2,628 ft of reconstruction, and 8,237 ft of pre-haul maintenance. Reconstruction work will vary by road, but will include the following activities: ditch construction (will require grubbing), realignment of vertical curves and centerline, sidecast retrieval (will require some end haul), pipe installations, ditch and headwall cleanout, application of surfacing, grading, and brushing.

1) How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?

The roads for this proposal have been planned as part of a larger transportation network to serve future management needs in the area. Such planning will provide for efficient use of the road system and eliminate unnecessary road construction.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Does not apply.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

A minor number of trips will be generated in association with normal land management activities.

g. Proposed measures to reduce or control transportation impacts, if any:

A gate will be constructed on the PT-O-4000 road at the junction with State Route 104. Access to the PT-O-3000 road system is controlled through two gates, one belonging to Pope Resources located at the junction with State Route 104 and one at the edge of State ownership. Both gates are customarily kept locked.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

Does not apply.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Does not apply.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

No utilities are available at the site. There is a underground waterline owned by the City of Port Townsend located in the northern portion of Unit 1. There is an associated air valve and electrical testing box located within the unit boundary but no water is removed or added to the pipeline within the unit.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: Jennifer Garstang Date: October 12, 2004 Title Forester